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| CODE: | ASME SECT. VIII, DIV. 1, LATEST EDITION |
| CODE CERT. REQ'D: | YES |
| NATIONAL BOARD REGISTRATION: | YES |
| OPR. PRESS.: | 347 PSIG @ 105° F |
| DES. PRESS. (INTL.): | 900 PSIG @ 300° F |
| DES. PRESS. (EXT.): | 15 PSI @ 300° F |
| MIN. METAL DES. TEMP.: | -20° F |
| CA: SHELL = 1/8" HEADS = 1/8" NOZZ = 1/8" | |
| SEISMIC PER: | NOTE 8 |
| WIND PER: | NOTE 9 |
| L.L. FOR DESIGN: | 3'-3" @ SP. GR. 0.98 |
| MAMP: | 941 PSIG @ 300° F LIMITED BY SHELL |
| MAP N&C: | 988 PSIG @ 60° F LIMITED BY SHELL |
| SHOP HYD: | 1285 PSIG @ 60° F |
| FIELD HYD N&C: | - PSIG @ 60° F |
| FIELD HYD CORR.: | 1224 PSIG @ 60° F |
| PWHT: | YES RADIOGRAPH RT - 1 |
| JOINT EFF.: | 100% |
| ALLOW. STRESS: | 20,000 PSIG @ 300° F |

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| MATERIALS: | |
| SHELL: | SA-516-70 N + Z QUALITY + PWHT (NACE) (NOTE 10, 12 & 18) |
| HEADS: | SA-516-70 N + Z QUALITY + PWHT (NACE) (NOTE 10, 12 & 18) |
| SUPPORTS: | SA-516-70 N |
| INTERNALS: | 316L SS TRAYS: N/A |
| BOLTS INT.: | SA-193-B8M NUTS: SA-194-8M |
| BOLTS EXT.: | SA-320-L7 NUTS: SA-194-4 |
| FLANGES: | SA-350-LF2 NOZZ NECK: SA-333-6 |
| GSKT: | NOTE 17 |
| CAPACITY: | 1,161 CU. FT. |
| FAB. WT.: | 91,100 LBS. EMPTY WT.: 107,000 LBS. |
| TRAY WT.: | N/A PACKING WT.: 8,800 LBS. |
| OPR. WT.: | 145,100 LBS. TEST WT. (SHOP): 171,800 LBS. |
| PAINTING: | NOTE 11 |
| INSULATION: | NONE |
| FIREPROOFING: | YES |

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| ACCESSORIES BY FABRICATOR: | YES | NO |
| VESSEL DAVIT MARK No. | | X |
| LADDER & PLATFORM CLIPS | X | |
| PIPE SUPPORTS AND PIPE GUIDE CLIPS | | X |
| INSULATION SUPPORTS | | X |
| FIREPROOFING SUPPORTS | X | |
| GROUNDING LUGS | X | |
| LIFTING LUGS | | |

| NOZZLE SCHEDULE | | | | | |
|-----------------|-----|------|-------|--------|--------------------------|
| ITEM | No. | SIZE | PROJ | RATING | SERVICE |
| N1 | 1 | 30" | PLAN | CL-600 | VAPOR EXIT |
| N2 | 1 | 30" | 5'-9" | CL-600 | FEED |
| N3 | 1 | 4" | ELEV. | CL-600 | LIQUID EXIT |
| N4 | 1 | 2" | ELEV. | CL-600 | VENT |
| N5A | 1 | 3" | 5'-3" | CL-600 | L.G./L.T. BRIDLE |
| N5B | 1 | 3" | ELEV. | CL-600 | L.G./L.T. BRIDLE |
| N6A | 1 | 3" | 5'-3" | CL-600 | LEVEL TRANSMITTER |
| N6B | 1 | 3" | ELEV. | CL-600 | LEVEL TRANSMITTER |
| N7 | 1 | 3" | 5'-3" | CL-600 | PSV |
| N8 | 1 | 2" | 5'-3" | CL-600 | PURGE |
| N9 | 1 | 6" | ELEV. | CL-600 | INSPECTION PORT W/ BLIND |
| M1 | 1 | 24" | 5'-9" | CL-600 | MANWAY W/B.F. & DAVIT |

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| FLANGE: | WNRF | FINISH: | 125-250 AARH |
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| DRAWING NO. | | TITLE | |
| CRT-AK-46-01 | | CRITERIA FOR NEW PRESSURE VESSELS | |
| SPC-AK-46-010 | | SPECIFICATION FOR NEW PRESSURE VESSELS | |
| SPC-AK-46-020 | | SPECIFICATION FOR STANDARD VESSEL DETAILS | |
| SPC-MA-00001 | | INTERNAL COATINGS FOR IMMERSION SERVICE | |
| | | - APPLICATION OF THIN FILM COATINGS | |
| SPC-MA-00002 | | EXTERNAL COATINGS FOR MODERATELY CORROSIVE SERVICE | |
| RP0178 | | NACE FABRICATION DETAILS FOR LINED VESSELS AND TANKS | |

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| STANDARDS AND SPECS | | | |
| STD-VS-230 | | GROUNDING CONNECTION DETAILS | |
| STD-VS-00-00216 | | COVER HANDLE | |
| STD-VS-00-00231 | | SACRIFICIAL ANODES & MOUNTING SOCKET | |
| STD-VS-NSS-00001 | | SACRIFICIAL ANODE INSTALLATION VESSELS & TANK | |

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| REFERENCE DRAWINGS | | | |
| NO. | DATE | REVISION | BY |
| A | 11/06 | ISSUED FOR IN-HOUSE REVIEW PER EPT 36324244-02 | YLT |
| B | 02/07 | ISSUED FOR CLIENT REVIEW PER EPT 36324244-02 | YLT |
| C | 08/07 | ISSUED FOR APPROVAL PER EPT 36324244-02 | KST |
| D | 01/08 | REVISED AS INDICATED PER EPT 36324244-02 | KST |
| E | 04/08 | REVISED AS INDICATED PER EPT 36324244-02 | KST |
| F | 11/08 | ISSUED FOR APPROVAL PER EPT 36324244-02 | KST |

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| ENGINEERING RECORD | DATE | TITLE OF DRAWING: | |
| DRN: | YLT 11/06 | Z PAD VESSELS | |
| DSGN: | YLT 11/06 | GENERAL ARRANGEMENT | |
| CHK: | PP 11/06 | 1ST STAGE SUCTION SCRUBBER VS-Z6001 | |
| APP: | RHK 11/06 | WORK ORDER | DRAWING NUMBER |
| APP: | RHK 11/06 | 36324244-02 | VS-WPZ-00002 |
| SCALE: | NONE | REV | SHEET |
| | | F | 001 |
| | | MODULE: 600 | JOB NUMBER: |
| | | | OF 002 |

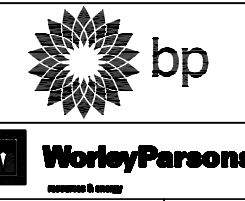
- NOTES (CONT'D):**
- EXTERNAL COATING = PER SPC-MA-00002 (EXCEPT UNDER SKIRT FIREPROOFING) ALL SURFACES (EXCEPT SKIRT) SHALL BE PAINTED PER TABLE 1 ABRASIVE BLAST CLEANING: SSSP-SP10
 - (1) COAT OF CARBOLINE CARBOZINC 11, 2.0-3.0 MILS DFT
 - (1) COAT OF CARBOLINE CARBOGUARD 893 SG, 4.0-6.0 MILS DFT
 - (1) COAT OF CARBOLINE CARBOETHANE 134 HG, 2.0-2.5 MILS DFT (OR LISTED EQUALS)
 SKIRT (OUTSIDE ONLY) ABRASIVE BLAST CLEANING: SSSP-SP10 2.0-2.5 PROFILE
 - (1) COAT OF INTERNATIONAL PAINT INTERGARD 269 2.0-3.0 MILS DFT (NEEDS TO BE COMPATIBLE WITH CHARTEK 7 FIREPROOFING)
 - CORROSION PROTECTION ANODES SHALL BE REQUIRED PER STD-VS-NSS-00001 AND STD-VS-00-00231.
 - FOR THICK C.S. WELDS > 2" PREHEAT FOR WELD JOINT SHALL BE MAINTAINED UNTIL PWHT OR INTERMEDIATE STRESS RELIEF (ISR). ISR SHALL BE PERFORMED AT 1,000°F FOR 1 HOUR MINIMUM BEFORE COOLING FROM PREHEAT. THIS REQUIREMENT APPLIES TO WELD REPAIR AND TO REPAIRS MADE TO LOCATIONS WHERE SAMPLES ARE REMOVED.
 - IN LIEU OF ISR, DEHYDROGENATION HEAT TREATMENT (DHT) SHALL BE MADE AT 570°F FOR 1 HOUR MINIMUM FOR WELDS THAT ARE COOLED DOWN BEFORE PWHT. THE REQUIREMENTS OF BOTH NOTE "13" & "14" ARE RECOMMENDED TO DRIVE OUT HYDROGEN FROM THE WELD METAL.
 - ALL NOZZLES SHALL BE INTEGRALLY REINFORCED IN ACCORDANCE WITH ASME SECTION VIII, DIVISION 1, FIGURE UW16.1 (f3), UW16.1 (f4) OR UW16.1 (e) AND SHALL HAVE WELDS 100% RADIOGRAPHED PER PARAGRAPH 5.1. OR FULL U.T. WHEN R.T. NOT PRACTICAL. IN ADDITION, NOZZLES WITH A DIAMETER LESS THAN 3" AND NOT INTEGRALLY REINFORCED MAY BE IN ACCORDANCE WITH UW16.1 (c), AND SHALL HAVE THE WELDS 100% ULTRASONIC INSPECTED.
 - ALL PRESSURE-CONTAINING WELDMENTS ARE TO BE CHECKED FOR HARDNESS OF WELD AND HEAT AFFECTED ZONE (HAZ), AFTER PWHT. THE MAXIMUM BRINELL HARDNESS (BHN) OF THE WELD AND BASE METAL IN HAZ SHALL NOT EXCEED 200 BHN.
 - GASKET: SPIRAL WOUND NON-ASBESTOS FILLED WITH 304SS WINDING & 1/8" OUTER C.S. CENTERING RING & S.S. INNER RING, CL-600 B16.20 FS CGI OR EQUAL.
 - VESSEL SHALL BE DESIGNED FOR 200 PPM H2S SERVICE. ALL MATERIALS SHALL MEET THE REQUIREMENTS OF NACE MR0175. ROLLED PLATE SHALL BE Z-QUALITY STEEL AS SPECIFIED IN SPC-AK-46-010, PARA. 6.2.2.

- NOTES:**
- ALL DIMENSIONS ARE FROM REFERENCE TANGENT LINE UNLESS NOTED OTHERWISE.
 - NOZZLES MANWAYS, ETC. SHALL HAVE THE SAME DESIGNATION AS SHOWN ON THIS DRAWING.
 - BOLT HOLES SHALL STRADDLE VESSEL NATURAL CENTERLINES, EXCEPT AS NOTED.
 - ALL REMOVABLE INTERNALS SHALL PASS THROUGH VESSEL MANWAY.
 - ALL ATTACHMENTS WELDED TO THE PRESSURE PARTS SHALL BE THE SAME MATERIAL "P" GROUP AS THE PRESSURE PART, UNLESS OTHERWISE NOTED.
 - FABRICATOR SHALL PROVIDE AND INSTALL CLIPS WELDED TO THE VESSEL. CLIPS SHALL HAVE CONTINUOUS SEAL WELD.
 - VESSEL SHALL BE THOROUGHLY CLEANED INSIDE AND OUTSIDE AND SHALL BE FREE FROM RUST, SCALE, SLAG, WELD SPATTER AND FOREIGN MATTER FOR SHOP HYDROTEST AND SHALL BE THOROUGHLY DRIED BEFORE SHIPPING.
 - SEISMIC DESIGN PER IBC 2006
 - SITE CLASS: B
 - IMPORTANT FACTOR Ip: 1.5
 - SPECTRAL RESPONSE ACC. @ SHORT PERIODS, Ss: 38.00%
 - SPECTRAL RESPONSE ACC. @ 1 SEC. PERIOD, S1: 10.00%
 - RESPONSE MODE FACTOR, Rp: 2.5
 - z/h RATIO: 1
 - AMPLIFICATION FACTOR, ap: 2.5
 - WIND DESIGN PER IBC 2006
 - BASIC WIND SPEED: 110 MPH
 - EXPOSURE: D
 - IMPORTANCE FACTOR, I: 1.15
 - WIND DIRECTIONALITY FACTOR, Kd: 0.95
 - TOPOGRAPHIC FACTOR, Kzt: 1
 - INTERNAL COATING = EPOXY COATING INSIDE FOR SHELL, HEADS, NOZZLE NECKS, ETC. PER SPC-MA-00001, CARBOLINE 368 WG, 2 COATS, 8.0-12.0 MILS DFT.

| BARGE LOADS | | |
|---------------|-------------|-------------------|
| LOAD | DESCRIPTION | FORCE COEFFICIENT |
| NORMAL WAVE | B1R | 0.3879 |
| | B1P | 0.1 |
| VER. | BIH | 0.33 |
| | B2R | 0.4512 |
| ABNORMAL WAVE | B2H | 0.4 |
| | B3P | 0.0922 |
| VER. | B3H | 0.4 |

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|--------------------|-----|-------|------------------------------------------------|-----|-----|------|-----|------|----------|----|-----|------|
| STD-VS-230 | | 11/06 | ISSUED FOR IN-HOUSE REVIEW PER EPT 36324244-02 | YLT | RHK | RHK | | | | | | |
| STD-VS-00-00216 | | 02/07 | ISSUED FOR CLIENT REVIEW PER EPT 36324244-02 | YLT | RHK | RHK | | | | | | |
| STD-VS-00-00231 | | 08/07 | ISSUED FOR APPROVAL PER EPT 36324244-02 | KST | RHK | RHK | | | | | | |
| STD-VS-NSS-00001 | | 01/08 | REVISED AS INDICATED PER EPT 36324244-02 | KST | RHK | RHK | | | | | | |
| | | 04/08 | REVISED AS INDICATED PER EPT 36324244-02 | KST | RHK | RHK | | | | | | |
| | | 11/08 | ISSUED FOR APPROVAL PER EPT 36324244-02 | KST | RHK | RHK | | | | | | |



ELEVATION
ONE VESSEL REQUIRED
SEE PLAN FOR TRUE ORIENTATION

DSGN/CNST

* BY FABRICATOR